

# **RULE 206 INCINERATOR BURNING**

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## 100 GENERAL

- 101 APPLICABILITY:** This rule applies to any incinerator which burns combustible or flammable waste or refuse-derived fuel.
- 102 EXEMPTION, BIOMASS BOILERS:** This rule shall not apply to boilers which have a primary energy source of biomass consisting of a minimum of 75 percent of the total annual heat input and which are subject to the requirements of Rule 232, BIOMASS SUSPENSION BOILERS, or Rule 233, BIOMASS BOILERS.
- 103 EXEMPTION, CREMATORY INCINERATORS:** This rule shall not apply to existing incinerators in operation on February 4, 1992 and which are exclusively crematoria of human or animal remains and are not modified or replaced.
- 104 EXEMPTION, EXISTING INCINERATORS:** The operating requirements of Section 302 shall not apply to an existing incinerator for which an Authority to Construct was issued by the Air Pollution Control Officer before February 4, 1992.
- 105 EXEMPTION, MEDICAL WASTE INCINERATORS:** This rule shall not apply to those incinerators which are subject to the requirements of Rule 906, AIRBORNE TOXIC CONTROL MEASURE - MEDICAL WASTE INCINERATORS.
- 106 EXEMPTION, RESIDENTIAL WASTE INCINERATORS:** This rule shall not apply to the burning of wood waste from trees, vines, or bushes burned on the property where grown; or rubbish originating from a single or two family dwelling on its premises, provided that the requirements of Regulation 3 are met; nor to an incinerator used exclusively in connection with a structure designed for and used exclusively as a dwelling for not more than four families.
- 107 EXEMPTION, TREATMENT UNITS:** This rule shall not apply to treatment units associated with aeration of contaminated soil, air stripping, and vapor extraction operations.

## 200 DEFINITIONS

- 201 ARB:** State of California Air Resources Board.
- 202 BIOMASS:** Any organic material not derived from fossil fuels, such as agricultural crop residues, bark, lawn, yard and garden clippings, leaves, silvicultural residue, tree and brush pruning, wood and wood chips, and wood waste, including these materials when separated from other waste streams. Biomass does not include material containing sewage sludge, industrial sludge, medical waste, hazardous waste, or radioactive waste.
- 203 CONTROL EQUIPMENT:** Any device which reduces emissions.
- 204 DIOXINS:** Dibenzo-p-dioxins and dibenzofurans chlorinated in the 2, 3, 7, and 8 positions and containing 4, 5, 6, or 7 chlorine atoms and is expressed as 2, 3, 7, 8 tetrachlorinated dibenzo-para-dioxin equivalents using current California Environmental Protection Agency toxic equivalency factors.
- 205 EXCESS AIR:** The air supplied in excess of that necessary to completely burn compounds.
- 206 INCINERATOR:** Any furnace or other closed fire chamber used to dispose of combustible or flammable materials by burning and from which the products of combustion are directed through a flue, chimney, or smoke stack. For the purposes of

this rule incinerators shall include boilers heated by the burning of waste, unless otherwise exempted in Section 100.

**207 MULTIPLE-CHAMBER INCINERATOR:** An incinerator consisting of three or more refractory lined combustion furnaces in series, physically separated by refractory walls, inter-connected by gas passage ports or ducts employing adequate design parameters necessary for maximum combustion of the materials to be burned.

**208 MULTIPLE-CHAMBER STARVED-AIR INCINERATOR (or Controlled Air Incinerator):** An incinerator which is designed to burn waste in two independent chambers:

208.1 Primary Chamber: where the majority of waste volume reduction occurs operated at sub-stoichiometric conditions.

208.2 Secondary Chamber: operates at excess air conditions; where destruction of gas-phase combustion products occurs. Passage ports, ducts, flues, chimneys, or stacks with burners shall not be considered Controlled Air secondary chambers unless the combustion zone exhibits design measures for the retention of the gas stream in the chamber, turbulence or mixing, and the availability of excess air, as determined by engineering analysis.

**209 REFUSE-DERIVED FUEL:** Treated or processed solid waste that is used as a fuel.

**210 UNCONTROLLED EMISSIONS:** The emissions measured from the incinerator at a location downstream of the last combustion chamber, but prior to any air pollution control equipment.

**211 STOICHIOMETRIC AIR:** An amount of air (theoretical combustion air) theoretically required for the complete combustion of compounds with total depletion of oxygen.

**212 SUB-STOICHIOMETRIC AIR:** An amount of air (theoretical combustion air) less than that required for the complete combustion of compounds.

**213 WASTE:** All discarded putrescible and nonputrescible solid, semisolid, and liquid materials, including garbage, trash, refuse, paper, rubbish, food, ashes, plastics, industrial wastes, demolition and construction wastes, equipment, instruments, utensils, appliances, manure, and human or animal solid and semi-solid wastes or remains.

**214 WASTE CHARGING RATE:** The amount of waste charged or fed into the incinerator per unit of time, usually expressed in terms of pounds per hour or kilograms per hour.

### **300 STANDARDS**

**301 EMISSION LIMITATIONS:** No person shall operate an incinerator subject to this rule unless:

301.1 Oxides of Nitrogen emissions, expressed as Nitrogen Dioxide (NO<sub>2</sub>), do not exceed 50 parts per million by volume, dry basis, (ppmdv) corrected to 12% carbon dioxide (CO<sub>2</sub>), for any 1 hour average emission rate.

301.2 Sulfur Dioxide emissions, expressed as Sulfur Dioxide (SO<sub>2</sub>), do not exceed 30 ppmv, corrected to 12% carbon dioxide (CO<sub>2</sub>), for any 1 hour average emission rate.

301.3 Carbon Monoxide (CO) emissions do not exceed 100 ppmv, corrected to 12% carbon dioxide (CO<sub>2</sub>), for any 1 hour average emission rate.

- 301.4 Particulate Matter emissions do not exceed 0.015 grains per dry cubic foot of gas at standard conditions, corrected to 12% carbon dioxide (CO<sub>2</sub>). The concentration limit shall apply to particulate matter measured using ARB Test Method 5.
- 301.5 Total Hydrocarbon emissions (THC) emissions expressed as equivalent methane do not exceed 10 ppmv, corrected to 12% carbon dioxide (CO<sub>2</sub>), for any 1 average hour emission rate.
- 301.6 Total Hydrochloric Acid (HCl) emissions do not exceed 30 ppmv, corrected to 12% carbon dioxide (CO<sub>2</sub>), for any 1 hour average emission rate.
- 301.7 Dioxins emissions have been reduced to 10 nanograms or less per kilogram of waste burned.

Demonstration of compliance with Subsections 301.6 and 301.7 shall not apply to incinerators which are exclusively crematoria of human or animal remains.

**302 OPERATING REQUIREMENTS:** No person shall operate an incinerator subject to this rule and not exempt under Section 102, unless control equipment is installed and used in a manner which has been demonstrated and approved by the Air Pollution Control Officer to meet the following requirements:

- 302.1 The flue gas temperature at the outlet of the control equipment shall not exceed 300 degrees Fahrenheit, unless it has been demonstrated to, and approved in writing by, both the ARB and the Air Pollution Control Officer that lower emissions are achieved at a higher outlet temperature;
- 302.2 Only multiple-chamber starved-air incinerators may be used. The primary combustion chamber shall be maintained at no less than 1400 degrees Fahrenheit, and the secondary chamber shall be maintained at no less than 1800 degrees ( $\pm$  200 degrees) Fahrenheit; and
- 302.3 The furnace design shall provide for a residence time in the secondary chamber for combustion gas of at least one second. Residence time shall be calculated using the following equation:

$$\text{Residence Time} = \frac{V}{Q_C}$$

Where: V = means the volume, as expressed in cubic feet, from the point in the incinerator where the maximum temperature has been reached until the point where the temperature has dropped to 1600°F.

Q<sub>C</sub> = means the combustion gas flow through V, as expressed in actual cubic feet per second, which is measured according to ARB Test Method 2, after adjusting the measured flow rate to the maximum combustion chamber temperature (T<sub>C</sub>) by using T<sub>C</sub> instead of T<sub>STD</sub> in the ARB Test Method 2 calculation for Q<sub>C</sub>.

The volumetric flow rate measured at the sampling points must be adjusted to chamber pressures.

Alternative methods may be used if conditions for determining the combustion gas flow rate by Method 2 are unacceptable. The determination shall be equivalent to, and within the guidelines of, ARB Test Method 2 and approved by the Air Pollution Control Officer and the U.S. Environmental Protection Agency (EPA).

$T_C$  = means the maximum temperature, in degrees Fahrenheit, that has been reached in the incinerator.

302.4 No person shall operate a waste or refuse-derived fuel incinerator unless the following equipment is installed and maintained in an operable condition:

- a. A continuous data recording system as specified in Section 501.
- b. Primary and secondary combustion chamber temperature indication.
- c. Equipment for determining and recording the weight of waste charged to the incinerator.
- d. An automated ram waste feeder with airlock, for batch fed incinerators, such that no ingress of external air occurs during the process of feeding waste to the primary combustion chamber.

**303 AUXILIARY FUEL:** Auxiliary fuels shall be natural gas, liquefied petroleum gas, or equivalent gaseous fuel.

**304 ASH HANDLING:** No person shall operate a waste incinerator unless the bottom ash, fly ash and scrubber residuals are handled and stored in a manner that prevents entrainment into ambient air.

#### **400 ADMINISTRATIVE REQUIREMENTS**

##### **401 COMPLIANCE SCHEDULE:**

401.1 By November 3, 1995, any person subject to the emission limitations in Section 301 shall submit an application for Authority to Construct for any modifications required to achieve compliance with this rule.

401.2 By November 3, 1996, any person subject to the emission limitations in Section 301 shall demonstrate final compliance with all applicable standards and requirements of this rule.

**402 UPSET NOTIFICATION:** Any violation, malfunction, or upset condition on the incinerator, the air pollution control equipment, or the continuous data recording system shall be reported to the District within 1 hour of occurrence or by 9:00 AM the next business day if the malfunction occurs outside normal business hours and the District does not maintain a radio room or an answering machine.

**403 OPERATOR CERTIFICATION:** No person shall operate a waste incinerator unless each individual who operates or maintains the incinerator obtains either a certificate of training in waste incineration issued by the American Society of Mechanical Engineers within nine months of the commencement of operation, or equivalent training as determined by the Air Pollution Control Officer. Copies of the training certificates for the operators and maintenance engineers shall be submitted to the District and the original certificates shall be available for inspection at the facility with the permit to operate.

**404 OPERATION AND MAINTENANCE PLAN:** Any person using an emission control device as a means of complying with the emission limitations of Section 301 shall submit an Operation and Maintenance Plan with the application for Authority to Construct for the emission control device.

404.1 The Operation and Maintenance Plan shall specify:

- a. Operation and maintenance procedures that will demonstrate continuous operation of the emission control device during emission-producing operations; and
- b. Records that must be kept to document the operation and maintenance procedures.

404.2 The records must comply with Sections 501, 505, and 506.

404.3 The Operation and Maintenance Plan shall be implemented upon approval by the Air Pollution Control Officer.

404.4 After completing the construction of the emission control device, the Operation and Maintenance Plan shall be resubmitted annually for approval.

## **500 MONITORING AND RECORDS**

**501 MONITORING:** Any person operating an incinerator subject to this rule shall maintain a data recording system which provides for each day of operation continuous recording of:

501.1 Primary and secondary combustion chamber temperatures;

501.2 Carbon monoxide emissions;

501.3 Hourly waste charging rates;

501.4 The opacity of stack emissions or other indicator of particulate matter which is approved by the Air Pollution Control Officer; and

501.5 Key operating parameters of the air pollution control equipment, as specified by the Air Pollution Control Officer.

**502 DETERMINATION OF COMPLIANCE:** For purposes of demonstrating initial or continued compliance with the emission limits of Section 301, any person operating an incinerator subject to this rule shall conduct the following source tests in the manner specified in Section 503:

502.1 Source test for Oxides of Nitrogen using ARB Test Method 100, Title 17, CCR, Section 94114, Procedures for Continuous Emission Stack Sampling, or EPA Test Method 7E.

502.2 Source test for Sulfur Dioxide using ARB Test Method 6, Title 17, CCR, Section 94106, Determination of Sulfur Dioxide Emissions from Stationary Sources, or ARB Test Method 100.

502.3 Source test for Carbon Monoxide using ARB Test Method 10, Title 17, CCR, Section 94109, Determination of Carbon Monoxide Emissions from Stationary Sources, or ARB Test Method 100.

- 502.4 One source test for Particulate Matter using ARB Test Method 5, Title 17, CCR, Section 94105, Determination of Particulate Matter Emissions from Stationary Sources, including non-volatile impinger catch.
- 502.5 One source test for Total Hydrocarbons using ARB Test Method 100, measured as equivalent methane.
- 502.6 One source test for Hydrochloric Acid using ARB Test Method 421, Title 17, CCR, Section 94131, Determination of Hydrochloric Acid Emissions from Stationary Sources, for waste or refuse-derived fuel incinerators, excluding crematoria.
- 502.7 One source test for Dioxins using ARB Test Method 428, Title 17, CCR, Section 94139, Determination of Polychlorinated Dibenzo-p-Dioxin (PCDD), Polychlorinated Dibenzofuran (PCDF), and Polychlorinated Biphenyl (PCB) Emissions from Stationary Sources, for waste or refuse-derived fuel incinerators, excluding crematoria. The high resolution mass spectrometry option of ARB Test Method 428 shall be used.
- 502.8 Source test for Carbon Dioxide using ARB Test Method 100, or EPA Test Method 3A.

Further source testing may be required by the Air Pollution Control Officer in accordance with Rule 501, Section 304, Provision of Sampling and Testing Facilities. The installed continuous emissions monitoring systems specified by Section 501 shall demonstrate compliance or non-compliance with the emission limitations of Section 301.

### **503 TEST REQUIREMENTS**

- 503.1 Test Plan: At least sixty (60) days prior to any testing, a written test plan (two copies) detailing the test methods and procedures to be used shall be submitted for approval by the Air Pollution Control Officer. The plan shall cite the test methods to be used for the determination of compliance with the emission limitations of this rule, including any use of alternate test methods proposed in accordance with Section 504. The plan shall provide the proposed procedures for the characterization of the representative waste to be burned during testing.
- 503.2 Test Performance and Reporting: For purposes of determining compliance with Section 301, the source testing shall be conducted at the stack. Information regarding the composition (moisture content, heating value in British Thermal Units, and amount of the total waste, by weight percent, that is paper or cardboard, plastics, glass, wet garbage, or that is hazardous or radioactive) and feed rate of the waste and auxiliary fuel charged during the source test shall be provided with the test results. The Air Pollution Control Officer can require additional necessary information regarding the composition of the waste. Source testing shall be conducted at the maximum waste firing capacity ( $\nabla$  10 percent) allowed by the air district permit. A copy of all source test results conducted for purposes of demonstrating compliance with this rule shall be provided to the ARB at the same time that it is provided to the District.

- 504 ALTERNATE TEST METHODS**: Alternate test methods, may be used to demonstrate compliance with Section 301 in lieu of the specified test methods of Section 503 only if approved in writing by, both the Air Pollution Control Officer and the U.S. EPA. Such test methods may include EPA test methods specified in 40 CFR 60 Appendix A, required for sources subject to New Source Performance Standards.



- 505 RECORDKEEPING:** Maintenance records shall be kept for the incinerator, control equipment, and monitoring equipment; and calibration records for the monitoring equipment.
- 506 DURATION OF RECORDS:** All records maintained pursuant to this rule shall be retained for at least two years from date of entry, with the exception that sources subject to the requirements of Rule 507, FEDERAL OPERATING PERMIT PROGRAM, shall retain records at least five years. Records shall be made available for inspection by the Air Pollution Control Officer upon request.

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